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BEFORE THE
Federal Communications Commission

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WASHINGTON, D.C. 20554

MAY 28 1993

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of

Replacement of Part 90 by
Part 88 to Revise the Private
Land Mobile Radio Services and
Modify the Policies Governing
Them

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PR Docket No. 92-235

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To: The Commission

COMMENTS
OF THE
AMERICAN PETROLEUM INSTITUTE

THE AMERICAN PETROLEUM INSTITUTE

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TABLE OF CONTENTS

	<u>Page</u>
SUMMARY	ii
I. PRELIMINARY STATEMENT	2
II. COMMENTS	6
A. The Refarmed Spectrum Should Be Allocated to at Least Five User Pools	6
B. The Commission Should Adopt a Regulatory Framework for Channel Exclusivity	11
C. Frequency Coordination Is an Important Element of the Refarming Process	14
D. The Proposal for Establishment of Innovator Shared Blocks Is Not in the Public Interest	17
E. The Transition Plan and Technical Rules Proposed by the Commission Require Further Consideration and Refinement	20
F. There Is a Continuing Requirement for Fixed Operations in the VHF and UHF Bands	25
G. Insufficient Low Power Channels	26
H. The Proposed Part 88 Provides Unsatisfactory Regulations for Geophysical Activities	27
I. Part 88 Should Include Provisions for Electronic Application Filing and Other Modified Licensing Procedures	29
J. Enforcement of Tower Marking Should Reside at FAA	33
III. CONCLUSION	34

SUMMARY

The American Petroleum Institute ("API") supports the initiative of the Federal Communications Commission ("Commission") to restructure the frequency bands below 512 MHz and revise the Rules and Regulations governing the Private Land Mobile Radio Services. While endorsing the concept of consolidating the several radio services into a fewer number of pools, the API does not support the extreme reduction proposed by the Commission. Alternatively, API seeks creation of an Industrial Safety Service that should include, but not necessarily be limited to, right-of-way companies, such as pipelines, railroads, public utilities, and other industrial users who also employ their systems for essential safety communications. Many right-of-way licensees are required by other federal regulations, for safety considerations, to provide redundant or highly reliable communications to support their operations. Furthermore, entities engaged in refining, manufacturing, forestry operations, and similar activities that also involve potentially hazardous conditions should be included in this category.

The API also supports the provision of competitive frequency coordination services with the understanding that

frequency recommendations retain their advisory character. The Commission is also urged to establish criteria for frequency coordination certification and to mandate the use of effective data processing techniques.

The API supports the introduction of 12.5 kHz equipment in the UHF and VHF spectrum consistent with the program outlined in the Consensus Plan of the Land Mobile Communications Council ("LMCC"). Regarding the VHF band, the API specifically endorses adoption of Option A described in the LMCC Consensus Plan. The LMCC proposal for using a table format for governing antenna height above average terrain ("HAAT") and transmitter effective radiated power ("ERP") is also supported with the understanding that users having special requirements will be provided an effective means of securing an exception to any general limitations. The API is opposed to the creation of a VHF innovator block, and urges the Commission to seize the opportunity presented in this proceeding to allocate specific VHF channels for emergency response communications.

The API is concerned that, in the Commission's eagerness to introduce new technology and reduce the volume of its Rules and Regulations, the Commission will inadvertently eliminate from its rules critical licensing

and operating provisions. Accordingly, these Comments point up specific areas requiring further attention prior to adoption of a Final Report and Order. In view of the broad range of issues examined in this proceeding, the API urges the Commission to seek further comments on controversial issues before concluding this matter even if that process requires adoption of a First Report and Order and Further Notice of Proposed Rule Making.

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COMMENTS
OF THE
AMERICAN PETROLEUM INSTITUTE

The American Petroleum Institute ("API"), by its attorneys and pursuant to Section 1.415 of the Rules and Regulations of the Federal Communications Commission ("Commission" or "FCC"), hereby submits these Comments in response to the Notice of Proposed Rule Making ("Notice") adopted by the Commission on October 8, 1992 in the above-styled proceeding 1/ The date for filing these Comments was

I. PRELIMINARY STATEMENT

1. API is a national trade association representing approximately 300 companies involved in all phases of the petroleum and natural gas industries, including exploration, production, refining, marketing, and transportation of petroleum, petroleum products and natural gas. Among its many activities, API acts on behalf of its members as spokesperson before federal and state regulatory agencies. The API Telecommunications Committee is one of the standing committees of the organization's Information Systems Committee. The Telecommunications Committee evaluates and develops responses to state and federal proposals affecting telecommunications facilities used in the oil and gas industries.

2. Reliable two-way land mobile radio is an essential tool in almost every phase of the oil and gas industries. Communications must be maintained during exploration activities for the direction of personnel and equipment, as well as for telemetering geophysical data. Drilling operations, by their very nature, involve hazards that can be minimized with reliable two-way radio communications. After production is established, mobile radio continues to play a critical role in providing communications for the

management of production sites where careful supervision must be maintained over the operation of valves, pumps, compressors and separation equipment. Operation of the extensive pipeline gathering systems and long-distance, crude, petroleum products and natural gas pipelines would not be possible without reliable mobile radio communications. These same types of reliable communications are absolutely necessary in petroleum refineries where the safety of personnel demands clear channels of communication. Even in the marketing and distribution of these energy sources, mobile radio continues to play an important role in the transfer of gas at city gates, and the loading and delivery by rail and tank trucks of refined petroleum products to industrial, commercial and residential customers.

3. The petroleum and natural gas industries were pioneers in the use of two-way mobile radio for industrial applications. In recent years, some two-way mobile radio communications have been served by other than the traditional private system. Even though use of private systems may be supplemented with cellular and Specialized Mobile Radio ("SMR") systems, where those services are available, there remains a very critical requirement for privately-owned and operated two-way mobile radio systems.

These energy industries also expect to be users of new personal communication systems in areas where these services are ultimately offered. Notwithstanding the advent of these additional communication options, the oil and gas industries will continue to be large users of private land mobile radio systems for several reasons. First, public switched systems frequently become incapacitated during emergency conditions because of peak subscriber demand. Private systems are essential in these circumstances to insure the ongoing safe execution of energy operations where hazardous conditions could develop without reliable communications. Moreover, private systems will continue to be needed in areas where there are inadequate or no public telecommunications facilities.

4. API is excited about the prospects for enhanced spectrum efficiency that will result from the introduction of digital technology in the Private Land Mobile Radio Services ("PLMRS"). It was one of the six parties that submitted Joint Comments and Joint Reply Comments in response to the Commission's Notice of Inquiry in PR Docket No. 91-170 that addressed spectrum efficiency in the PLMRS. The API continues to support the careful examination of new technologies and alternative regulatory approaches, and the ultimate adoption of rules that will provide for the

introduction in the PLMRS of digital equipment, and the ultimate rechannelization of the frequency bands 150-174 MHz and 450-512 MHz, as well as consolidation of the multiplicity of radio services into fewer categories. The API is most appreciative of the tremendous effort undertaken by the Commission to develop the proposed changes advanced in this proceeding.

5. The API supports, in large part, adoption of the underlying changes proposed by the Commission. At the same time, it is concerned that the equipment transition plan advanced is too ambitious and that it could require the premature and unnecessary replacement of entire mobile radio systems. These concerns are founded on the imposition of unnecessary capital expenditures, and the potential that the desired equipment development and mass production will not meet the Commission's expectations. The API is also concerned that the proposal is silent on the matter of mandating minimum interoperability standards so that users are not foreclosed from expanding their systems with the products of more than a single equipment manufacturer.

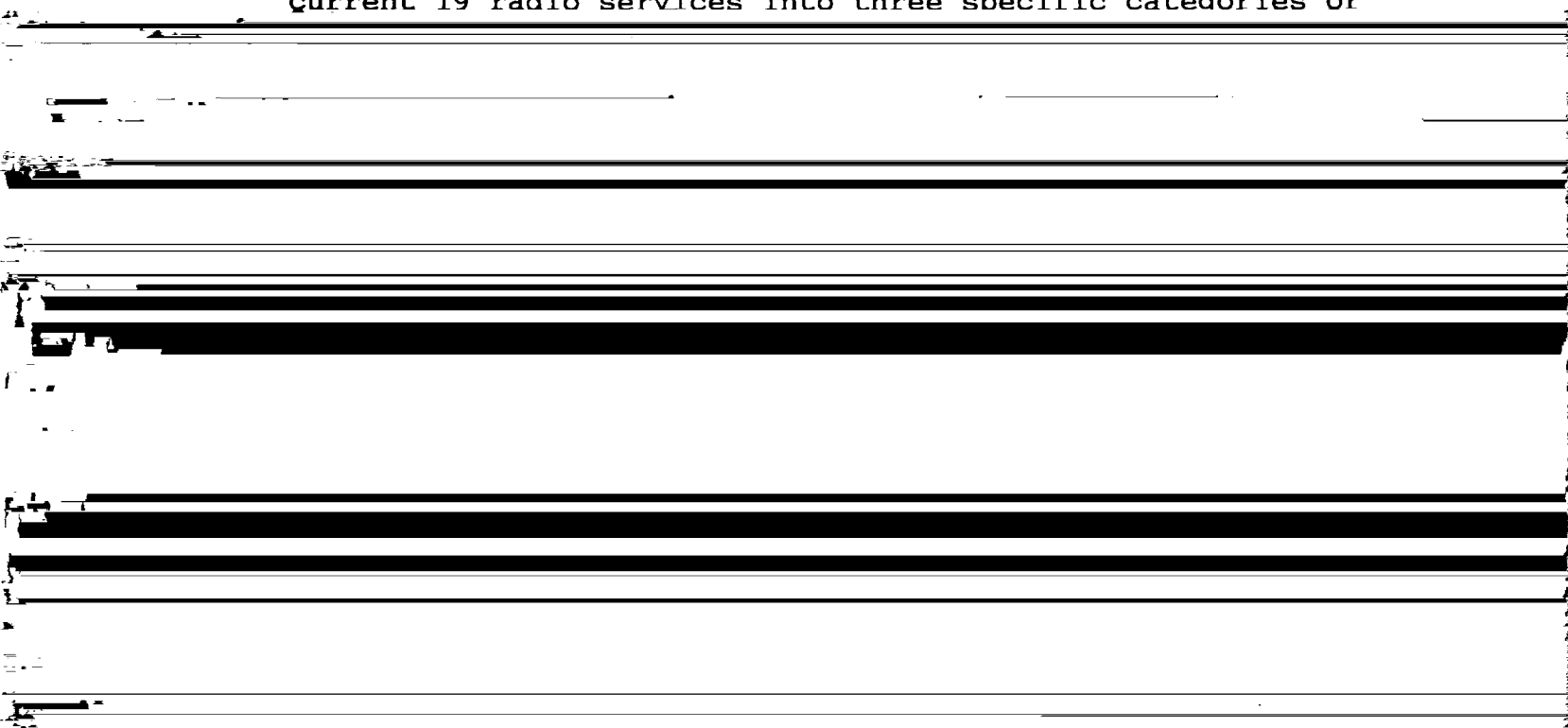
6. There is also concern that sufficient consideration has not yet been given to the optimum number of service pools. The API finds disquieting the proposal to

restrict antenna height above average terrain (HAAT) and transmitter effective radiated power ("ERP"). Although the goal of facilitating greater frequency reuse is commendable, the proposal fails to adequately consider all of the unique requirements of users in the oil and gas industries. There are other elements of the Commission's proposal that require closer examination and refinement; and, accordingly, the American Petroleum Institute is pleased to submit these Comments.

II. COMMENTS

A. **The Refarmed Spectrum Should Be Allocated to at Least Five User Pools**

7. The proposal envisions the consolidation of the current 19 radio services into three specific categories or



be designated the Industrial Safety Service. This category should include, but not necessarily be limited to, right-of-way companies, such as pipelines, railroads, public utilities, and other industrial users who employ their system for essential safety communications such as those necessary in refineries, manufacturing facilities, forestry operations, heavy construction, and in other activities involving potentially hazardous conditions. These types of users, as well as those in allied industries, employ their two-way mobile radio systems under circumstances requiring close coordination for safety purposes. These uses transcend those of many other users who employ their mobile radio communication systems primarily for commercial purposes.

8. Petroleum and natural gas users, among other entities that should be included in an Industrial Safety Service, are charged with a higher level of responsibility regarding their communications system that demands a separate frequency allocation and different technical and operational rules. For example, many oil and gas mobile radio systems are indispensable components of the communications networks required by the U.S. Department of Transportation ("DOT") for companies engaged in the transportation of hazardous liquids by pipeline. DOT

regulations mandate that each operator of a hazardous liquid pipeline establish communications systems designed to carry operational information and data necessary to promote safe pipeline operations. By regulation, these communications

~~systems are required to reliably transmit monitoring data~~

implemented communication systems that cover vast areas where implementation of the proposed ERP/HAAT limitations will severely reduce the size of existing service areas. Adoption of the Commission's proposal will necessitate the acquisition of additional sites, towers, RF equipment and remote control circuits to duplicate existing service. This will entail the unnecessary expenditure of large additional

costs to provide the same coverage now available with

users require balanced systems that frequently must be engineered. Their operational requirements do not necessarily fit standardized radii apparently contemplated by the Commission's ERP/HAAT proposal.

11. The Commission has proposed in Section 88.15 to provide eligibility in the NCR to "any business, charitable or non-profit organization, or government agency" In light of the fact that the Commission has proposed to establish a separate Public Safety Radio Service for which eligibility is limited to "any territory, possession, state, city, county, town, or similar government entity . . .", it is respectfully submitted that the proposal to also permit use of the NCR allocation by governmental entities goes far beyond the spectral requirements for public safety purposes. Public safety representatives have long argued for separate allocations to meet their special requirements, and the API endorses a separate allocation for public safety communications. There is concern, however, that establishing even a permissive mechanism that would allow mixed use between industrial/commercial and public safety entities does not serve the best interest of either type of user.

**B. The Commission Should Adopt a Regulatory Framework
for Channel Exclusivity**

12. The API supports adoption of the Exclusive Use
Overlay ("EUO") concept. The Commission's proposal

13. Generally speaking, the EUO proposal relies too heavily on the use of mobile loading standards to ensure efficient use of the radio spectrum. This measure is not necessarily an accurate or appropriate gauge to use for exclusivity determinations. Traffic volumes, actual coverage areas, and system geographic location are equally important criteria. While realizing that mobile transmitter count provides a convenient measure for the Commission's purposes, the API urges that the rule be structured in such a manner as to provide exceptions based on other important considerations.

14. Demand for mobile radio spectrum in a geographic area is closely correlated to population density. Three separate loading requirements exist for stations operated on assignments below 800 MHz, and are based on the proximity of the station to population centers. It is assumed that the rural/non-rural distinction for 800 MHz trunked systems is also made to account for differences in population density. If the Commission is going to continue relying on mobile count as a regulatory tool, the rural/non-rural distinction should also be made with respect to the loading required for exclusive use of conventional 800 MHz channels. The current requirement is that all conventional 800 MHz stations be loaded with a minimum of 70 mobiles. This may be an

unrealistic expectation in rural areas just as it is in lower frequency bands. The API therefore recommends that the loading requirements to obtain exclusivity for 800 MHz conventional channels set forth in Section 88.289 be identical to those specified in Section 88.273 that apply to exclusivity for assignments in the bands below 806 MHz.

15. The proposal is based on a concept that vertical loading of channels is preferable over horizontal loading. In urban areas, this proposition may be warranted but, in rural areas where the demand is much lighter, horizontal loading will provide users far better service. In most cases, exclusive use (even if by default) would be preferred to channel sharing. Because of the large number of additional channels that will become available through the proposed refarming process, horizontal loading should be permitted in rural areas.

16. The Commission has proposed [§ 88.19(c)] that, in instances where there is no preferred existing licensee, an EUO grant be conditioned on system construction within six months of the grant. The customary period is eight months from date of grant (§ 88.131). While API appreciates the apparent rationale supporting this accelerated construction period for the exclusivity benefit conferred, the proposed

rule introduces potential confusion and would only deliver a mere two month acceleration in return. In the interests of regulatory simplification and uniformity, API recommends the extension of the standard eight months construction period for EUO stations.

17. Possibly as a result of oil and gas companies having been very early users of two-way mobile radio, there are extensive systems employing channel assignments from the low band (30-50 MHz). Many of these licensees have expressed grave concern that, if these assignments are to be included in a broad eligibility pool and the EUO rules are not extended to their operations, they may find use of their systems severely compromised by new co-channel users of disparate backgrounds. Accordingly, should the Commission include Petroleum Radio Service low band channels in any new pool, API strongly urges that the EUO concept be extended to those channels.

C. Frequency Coordination Is an Important Element of the Refarming Process

18. API generally supports the continued use of frequency coordinators in the refarmed environment. Since the Commission's proposal contemplates the provision of

competitive frequency coordination services, the anticipated market environment may ameliorate some of the existing concerns regarding quality of service and perceived excesses in fee schedules. Nevertheless, API urges the Commission to define the criteria for existing and new coordinators that must be met for continued agency certification.

19. The maintenance of accurate and reliable frequency coordination data bases will be essential as existing users move to narrowband assignments and new licensees commence operation on the newly-created channels -- particularly in congested areas. In light of the Commission's limited resources, as well as the coordinators' general familiarity with user operating techniques, preferences and trends, it is generally felt that some frequency coordinators may be uniquely positioned to make a valuable contribution in the transition to narrowband operations. On the other hand, in less congested areas where there is truly no technical coordination to be performed, the availability of an accurate Commission data base could permit direct submission to the Commission without prior frequency coordination.

20. The Commission's proposal to permit applicants to use any certified frequency coordinator raises several issues. The likelihood of coordinators using multiple,

independent data bases that may not reflect the same
information could result in cases of serious interference.
There is also some fear that "coordinator shopping" will

organizations, or quality control, will be unnecessarily cumbersome.

22. The API emphasizes that the role of the coordinator should continue to be strictly "advisory", with the Commission remaining responsible for making final determinations on requests for any deviation from the regulations. There is concern in the API membership that most coordinators simply do not have the operational background to make system design determinations that must continue to be the province of applicants who have the responsibility for the safe and efficient operation of oil and gas exploration, production, refining, and pipeline telecommunications.

D. The Proposal for Establishment of Innovator Shared Blocks Is Not in the Public Interest

23. The Commission has proposed to set aside approximately two hundred fifty 5 kHz channels from the frequency band 150-174 MHz to be dedicated to a new private carrier service that would, presumably, employ the most advanced technology for subscriber-based systems. The API applauds the Commission's initiative from the point of view that such an allocation would, hopefully, promote the

development and implementation of even more advanced mobile radio systems. On the other hand, it is respectfully submitted that the adoption of the proposal would not truly serve the public interest. In fact, the API is convinced that adoption of the innovator block proposal would constitute an egregious disservice.

24. In its Comments filed in ET Docket No. 90-314, the API set forth in detail the requirement for a dedicated allocation of channels to be used for emergency response communications -- not only in the oil and gas industries, but in any context in which the private sector is required to respond to emergency conditions. The Commission has not addressed that request, but it continues to demand a rational response. It is inconceivable that, in light of the demonstrated need for an emergency response allocation, the Commission would not take this opportunity to create

~~that important public resource. Major emergencies create~~

continuity of future assignments in this band. The allocation would create a circumstance in which it would be impossible to "stack" more than two frequencies to meet wideband requirements, and therefore seriously compromise the potential use of any kind of TDMA technology. API submits that the rules should include provision for the use of up to 100 kHz of contiguous spectrum for wideband

**E. The Transition Plan and Technical Rules Proposed
by the Commission Require Further Consideration
and Refinement**

27. The Commission's proposed equipment transition or migration plan contemplates that by January 1, 1996, existing licensees will have reduced the deviation of existing transmitters. While the proposal cites the relatively low cost of "turning down the deviation" of these transmitters, it does not address other considerations that may require the retrofitting or outright replacement of receivers employed in the same systems. Current radio systems are designed to accommodate a receive-system bandwidth that is a function of a fundamental design and not a potentiometer setting. The frequency stability of some transmitters is insufficient to prevent interference following this type of modification. Some radios might have the option of replacing the intermediate frequency ("IF") filter with sharper units that would provide more receiver selectivity. However, more than likely, the entire receiver will have to be replaced. It is also likely that the cost of retrofitting radios will be more expensive than just replacing existing equipment. Accordingly, it is quite conceivable that adherence to the proposed transition plan will result in the massive replacement of existing hardware